Ensuring Water for Wildlife
May 23, 2005

Note: The following summary of the results of this workshop reflects the collective discussion and general conclusions of the workshop participants and does not necessarily reflect the views of the Department of Fish and Game, the Wildlife Diversity Project at UC Davis, or any individual participant.

The Issue

There is increasing urgency to secure water for the long-term benefit of wildlife, particularly in light of the increasing demand for consumptive use of water. Water distribution and management are complex and legally constrained. Water's quality and quantity and the rising cost to supply water are critical for wildlife management throughout California. Integrated planning across agencies, political boundaries, and geographic scales, along with innovative approaches to water finance, storage, and transfers, offer opportunities to secure water for wildlife needs while providing water for agricultural and domestic uses. The relicensing of hydropower projects through the Federal Energy Regulatory Commissions (FERC) process is also an opportunity to improve conditions for aquatic ecosystems and riparian habitats and species.

Most of California's wildlife species depend upon wetlands, lakes, rivers, and riparian habitats at some point in their life cycles. Degradation of habitat is often the consequence of failing to ensure adequate water for wildlife. Habitat and species loss may be due to changes in water quantity or quality, salinity, flow rates, temperature, seasonal flow patterns, or groundwater levels. These changes may also facilitate the establishment of non-native species.

Current Situation

The workshop participants focused on several current conditions, which were especially complex due to the entanglement of public health concerns, water laws and policy, and the ecological requirements of wildlife.

Water quality, quantity, and timing all have an effect on wetlands for wildlife.

Wetlands support hundreds of species, including waterfowl and other birds, fish, amphibians, and invertebrates. The condition and management of wetlands depends on water. The quantity, quality, timing, and cost of water are all important issues for sustaining wetlands. Some wetlands are also integrated into providing ecosystem service to the local community, processing stormwater or sewage drain water. This water may not only be substandard in its quality, but the quantity can be erratic in volume and timing.

Maintaining wetlands also involves other issues, such as mosquito abatement, particularly now with the arrival of West Nile virus in the region. Wetland refuges are charged for mosquito abatement, a substantial expense, and the pesticide spraying causes ecological damage to wetland invertebrates and the aquatic food chain.

Altered stream flows affect wildlife.

Migratory and reproductive behaviors of many species can be affected by changes in a river's seasonal flow patterns. Not only are the cues of rising or falling water volumes disrupted, but necessary habitat may be lost due to excessive or restricted scouring or bank overflow. Water storage for flood control and consumptive uses, as well as out-of-basin water transfers, affect the quantity, quality, and timing of water in California's rivers and streams. Large dams trap sediments, changing the physical nature of downstream habitats. Altered water temperatures and saline intrusions from the Pacific Ocean can also disrupt breeding and animal nursery habitats and changes in species composition. Over the next 10 years, relicensing of hydropower dams through the FERC process will provide opportunities to improve instream flows for wildlife.

Changes in land use and agricultural production can directly affect the water and habitat available for wildlife.

Conversion of agricultural lands to urban centers may change the water flow pattern of an area, as well as the amount of available habitat for wildlife. Rice production in the Central Valley provides significant waterfowl habitat, which is lost when those lands are converted to other crops or are developed. Currently, water transport ditches, as well as adjacent habitat fed by the leaky ditches, can themselves provide food and habitat for wildlife. Water-use efficiencies gained by lining or covering ditches, while increasing the amount of water for use downstream, can also result in a loss of habitat.

Water policy and laws do not adequately consider wildlife values.

California continues to become an increasingly urban state, with water laws and policies that address human needs and limit water use for wildlife conservation purposes. Overallocation of water resources creates a competitive situation for limited water in a complex legal and institutional framework. The focus currently is on regulation, but future efforts need to add a cooperative, willing-seller approach for long-term solutions. Currently, ungauged water use keeps some water rights holders from participating in transfer discussions under California Water Code section 1707. In addition, conflicting policies and laws must be addressed, such as the spraying for mosquitoes in wetlands with nonspecific pesticides.

Regional integrated planning needs to fully consider wildlife needs.

Wildlife conservation objectives and obligations are not adequately represented in regional integrated planning projects. Out-of-basin water transfers complicate integration of projects within a region, because not all of the available water is being used within the watershed. Additional incentives and adequate staffing from agencies are needed to fully represent wildlife in regional water planning and the FERC hydropower relicensing processes.

Climate change adds long-term uncertainty and the likelihood of seasonal changes in precipitation that must be addressed through changes in storage and distribution systems, and these changes should be considered in the long-term water planning for wildlife conservation and other water demands.

Insufficient funding for supplemental water supplies for wetlands and instream flow is a major concern for wildlife conservation.

The cost of purchasing water for wetlands on the market, especially the spot market, can be very expensive and unpredictable and is becoming more difficult with declining agency budgets. Permanent or long-term water leases for wetlands are needed to replace spot market purchases, but additional public funding is often not available.

Needs Identified

Needs are presented in groups that reflect the major issues identified in the Current Situation Section, with some melding and reorganizing of issues.

Improve water quality, quantity, and timing for wildlife.

- Acquire sufficient water for fish and wildlife resources.
- Effectively implement existing state and federal mandates for environmental flow.
- Create a water transfer clearinghouse for easy reference in order to facilitate analysis and impact assessment and design sufficient mitigation.
- Have resource agencies collaborate to secure benefits for wildlife through the FERC hydropower project relicensing process.
- Establish a science advisory committee with wildlife conservation expertise to advise water-quality and water-supply agencies statewide.

Support regional integrated planning.

- Planning should be integrated, comprehensive, and strategic, and should involve all stakeholders.

- State and federal agencies and nongovernmental organizations that work at the state and national levels must be trained in how to work with locally and regionally driven planning and funding processes.
- Ensure that qualified science and wildlife expertise is brought into the regional planning efforts through qualified state and federal agency staff and expert contractors.
- Dedicate additional agency staff to work on the FERC process at this critical time.
- Encourage the legislature to monitor and strengthen regional integrated water planning such as that currently occurring with Proposition 50 funding. (Prop. 50 provides project funding to local agencies if the project is consistent with an adopted regional integrated water management plan.)

Develop funding and incentives.

- Develop a water transfer fee or in-kind requirement that all water transfers include and allocation of water for wildlife.
- Assess an acre-foot fee statewide on water use devoted to aquatic ecosystem and wildlife conservation.
- Determine what the implications are for wildlife conservation regarding the "beneficiary pays" approach.
- Develop a water trust.
- Develop a public trust advocate office at the State Water Resources Control Board.
- Ensure that future resource or water bonds pay for proposed enhancements.
- Identify interstate funding opportunities and develop partnerships to lobby Congress; e.g., secure funding for wetlands restoration as has been secured for salmon and steelhead restoration).

Apply sound science to water and wildlife decisions.

- Establish performance criteria and compliance monitoring on water use agreements and for other programs and projects.
- Assess FERC hydropower project effects on aquatic and riparian ecosystems and on wildlife.
- Incorporate adaptive management approaches into policies and projects.
- Develop the information needed to better understand the water needs of wildlife.
- Establish the California equivalent of the National Academy of Sciences to enable rapid development of new information and to resolve scientific disputes.

Workshop Participants

Atkinson, Andy, Gray Lodge, Department of Fish and Game

Bonham, Chuck, Trout Unlimited

Colborn, Diane, California State Assembly

Donlan, Rob, Ellison, Schneider and Harris, LLP

Feliz, Dave, Yolo Wildlife Refuge

Ferguson, Aaron, Northern California Water Association

Gregory, Dan, U.S. Bureau of Reclamation

Hayden, Ann, Environmental Defense

Henley, Mark, California Waterfowl Association

Hoshovsky, Marc, Department of Fish and Game

Ingrahm, Campbell, U.S Fish and Wildlife Service

Kwasny, Dean, Department of Fish and Game

Meier, Dan, U.S. Bureau of Reclamation

Murray, Nancee, Department of Fish and Game

Perrine, Peter, Wildlife Conservation Board, Wetlands Program

Poole, Randy, Sonoma Water Agency

Reid, Fritz, Ducks Unlimited

Spivy-Weber, Frances, Mono Lake Committee

Weber, Renee, Sonoma Water Agency

Widell, Dave, Ducks Unlimited

Zirkle, Olen, Ducks Unlimited